

APPARATUS FOR MAKING A NONWOVEN FIBROUS ELECTRET WEB FROM FREE-FIBER AND POLAR LIQUID

ABSTRACT OF THE DISCLOSURE

An apparatus for charging fibers that contain a nonconductive polymer. A polar liquid 32, 34 is sprayed onto free-fibers 24, and the free-fibers 24 are then collected to form an entangled nonwoven fibrous web 25 that may contain a portion of the polar liquid. The nonwoven web 25 is then dried 38. By applying an effective amount of polar liquid 32, 34 onto the nonconductive free-fibers 24 before forming the nonwoven web 25, followed by drying 38, the individual fibers 24 become charged. The apparatus can enable the fibers 24 to be charged during web manufacture without subsequent processing.